2.2.3.15 Southeast Glacial Plains Ecological Landscape

General Description

The Southeast Glacial Plains Ecological Landscape makes up the bulk of the non-coastal land area in southeast Wisconsin (Figure 2-45). This Ecological Landscape is made up of glacial till plains and moraines. Most of this Ecological Landscape is composed of glacial materials deposited during the Wisconsin Ice Age, but the southwest portion consists of older, pre-Wisconsin till with a more dissected topography. Soils are lime-rich tills overlain in most areas by a silt-loam loess cap. Agricultural and residential interests throughout the landscape have significantly altered the historical vegetation. Most of the rare natural communities that remain are associated with large moraines or in areas where the Niagara Escarpment occurs close to the surface.

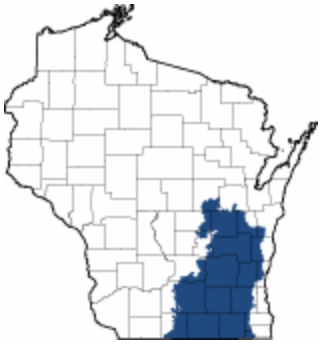

Figure 2-45. Southeast Glacial Plains Ecological Landscape.

Vegetation

Historically, vegetation in the Southeast Glacial Plains consisted of a mix of prairie, oak forests and savanna, and maple-basswood forests. Wet-mesic prairies, southern sedge meadows, emergent marshes, and calcareous fens were found in lower portions of the Landscape. End moraines and drumlins supported savannas and forests.

Agricultural and urban land use practices have drastically changed the land cover of the Southeast Glacial Plains since Euro-American settlement. The current vegetation is primarily agricultural cropland (Figure 2-46). Remaining forests occupy only about 10% of the land area and consist of maple-basswood, lowland hardwoods, and oak. No large mesic forests exist today except on the Kettle Interlobate Moraine which has topography too rugged for agriculture. Some existing forest patches that were formerly savannas have succeeded to hardwood forest due to fire suppression.

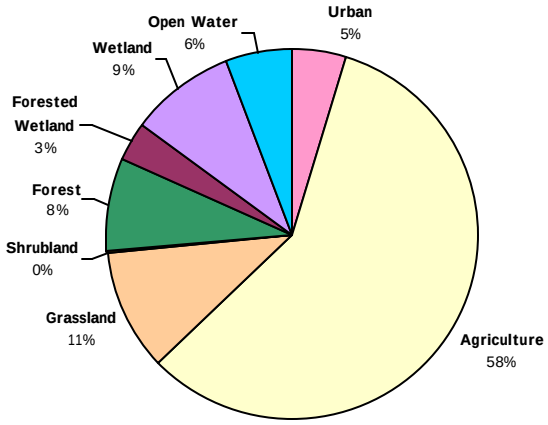

Figure 2-46. Current land cover in the Southeast Glacial Plain Ecological Landscape.

Hydrologic Features

The Southeast Glacial Plains has the highest aquatic productivity for plants, insects, invertebrates, and fish of any Ecological Landscape in the state. Significant river systems include the Mukwonago, Wolf, Sheboygan, Milwaukee, Rock, Sugar, and Fox. Most riparian zones have been degraded through forest clearing, urban development, and intensive agricultural practices. The Ecological Landscape contains several large lakes, including those in the Madison area and in the Lake Winnebago Pool system. These lakes are important to many aquatic species including the lake sturgeon. Kettle lakes are common on end moraines and in outwash channels. In addition to Horicon Marsh, this Ecological Landscape contains important fens, tamarack swamp, wet prairies, and wet-mesic prairies that contain rare plants and animals. However, most wetlands have experienced widespread ditching, grazing, and infestation by invasive plants. Watershed

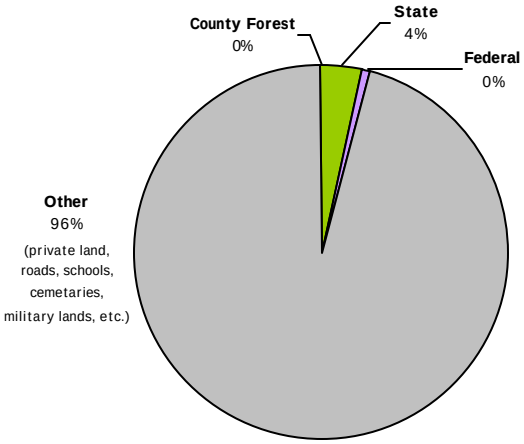

Figure 2-47. Public land ownership in the Southeast Glacial Plain Ecological Landscape.

pollution in the Ecological Landscape is about average according to rankings by Wisconsin DNR, but groundwater pollution is worse than average compared to the rest of the state.

Land Use

The total land area for the Ecological Landscape is approximately 4.9 million acres, of which only 10% is classified as timberland. Only about 4% of the area of this Ecological Landscape is publicly owned (Figure 2-47). Many of these are the least developed areas in southeastern Wisconsin, and the Kettle Moraine represents the largest contiguous patch of undeveloped land.

Socioeconomics

Socioeconomic data are summarized based on county-level approximations of the Ecological Landscape (referred to as a "region"). Economic data are available only on a political unit basis with counties as the smallest unit. The counties included in this socioeconomic region are Calumet, Columbia, Dane, Dodge, Fond du Lac, Green, Green Lake, Jefferson, Ozaukee, Rock, Sheboygan, Walworth, Washington, Waukesha, Waupaca, and Winnebago ("Southeast Glacial Plains Region").

Although the Southeast Glacial Plains Region is quite urban compared to other state areas, agriculture is very important. Among the regions it ranks third in percent of acreage in farmland, market value of agricultural products per acre, and milk production per acre; it ranks second in corn production. Note that farmland includes all land under farm ownership such as cropland, pastureland, and woodland.) The percentage of agricultural land sold and diverted to other uses is below average. Recreation is also important in this region. It has the highest number of fishery and wildlife areas, the second highest number of state parks and forests, and one of the highest ratios of water to land surface area. Per capita water use is near average.

The Southeast Glacial Plains Region is economically prosperous with a well-educated and racially diverse population. The population density (188 persons/ mi^2) is about twice that of the state as a whole (96 persons/ mi^2), the second highest population density among the regions. This region has the third lowest population of elderly (over 65 years old) while the proportion of nonwhites, especially Hispanics and African Americans, is one of the highest. The per capita income, average wage, and number of high school and college graduates are all third highest, while the rates of poverty and unemployment are both third lowest among the regions. The manufacturing sector is relatively strong, whereas farming, though very productive, does not provide a large percentage of jobs.

Management Opportunities

- Protection of the Niagara Escarpment, glacial eskers and drumlin fields, that are unique and, in some cases world-renowned, features.
- In the Kettle Moraine area, opportunities exist to restore large-scale oak forests and savannas, as well as to manage for forest interior species and rare fen plants.
- Throughout the Ecological Landscape, there are opportunities for linking scattered woodlots and for controlling invasive exotic species.
- Scattered tamarack swamps support unusual assemblages of species and many are in need of restoration, management, and protection.
- There are many opportunities for restoration and management of wetlands such as Horicon Marsh, shallow water lakes (e.g., Lake Winnebago Pools, Rush Lake, and Koshkonong), and larger lakes that support fisheries (e.g., Madison area lakes, Waukesha County lakes). Cedarburg Bog warrants hydrologic restoration as well as reconnection to its formerly linked wetland systems.
- Many rivers are in need of restoration and protection particularly the Mukwanago, which supports exceptional aquatic diversity, and also the Genesse, upper Milwaukee, and Bark rivers.
- Water quality in many watersheds within the Ecological Landscape needs improvement.

- Non-indigenous invasive species are a particular problem in this Ecological Landscape due to the high level of development and disturbance, and, for aquatic species, the connection of many river systems to Lake Michigan.
- Floodplain forests on the Sugar River and the lower Wolf River are unique communities that support rare or otherwise significant species. These areas warrant further protection and restoration.
- Riparian zones throughout the Ecological Landscape present an opportunity for restoration.
- There is potential for increasing public land ownership to accommodate recreation needs and ecological functions.

Natural Communities

The following table (Table 2-17) lists the natural communities occurring in the Southeast Glacial Plains arranged by the level of opportunity to sustain and manage the community type in this Ecological Landscape. For further explanation of natural communities and opportunities to sustain them, see Section 3.3.

Table 2-17. Natural communities occurring in the Southeast Glacial Plains arranged by the level of opportunity to sustain and manage the natural community type in this Ecological Landscape.

Major Opportunity	Important Opportunity	Present
Northern Hardwood Swamp	Northern Wet-Mesic Forest	Northern Dry-Mesic Forest
Floodplain Forest	Northern Wet Forest	Sand Prairie
Southern Dry Forest	Southern Hardwood Swamp	
Southern Dry-Mesic Forest	Southern Mesic Forest	
Southern Tamarack Swamp	Cedar Glade	
Oak Opening	Emergent Aquatic-Wild Rice	
Oak Woodland	Submergent Aquatic	
Dry-Mesic Prairie	Alder Thicket	
Dry Prairie	Ephemeral Pond	
Mesic Prairie	Northern Sedge Meadow	
Emergent Aquatic	Wet Prairie	
Bog Relict	Moist Cliff	
Calcareous Fen (Southern)		
Shrub Carr		
Southern Sedge Meadow		
Wet-Mesic Prairie		
Dry Cliff		